

Infrared Thermometer Instructions

Use the following technique in newborns from birth to four weeks of age:

When measuring the temperature of neonates in open cots, the ORAL setting should be used which will provide an ear temperature adjusted to the range of temperature normally seen at the axillary site.

1. Visually inspect the ear canal to make sure it is dry and free of vernix to allow infrared energy to exit the ear canal. Note the general angle of the canal.
2. Remove probe from base unit by grasping the probe shaft firmly, just below the **RELEASE** button, and lift out of base.
3. Select TYMPANIC by pressing mode button (if TYMPANIC is not already displayed).
4. Make sure the GENIUS thermometer is in tympanic ORAL equivalence. Always use ORAL equivalence with neonates. This provides the axillary frame of reference, the standard in neonatal patients.
5. Check the GENIUS probe tip to make sure it is clean.
6. Place disposable cover on probe tip, making sure that cover is firmly in place.
7. Manually retract the skin in front of the tragus forward toward the eye. Place probe tip snugly over the external ear opening, being careful to seal out ambient air and light. Aim the probe tip in the direction of the ear canal, making sure there is a good seal over the external auditory meatus. Once the probe is in place, let go of the skin. It will then close in on the probe helping to form a seal. Apply only gentle pressure to avoid compressing the very soft tissue in the ear, which could block the infrared energy from reaching the probe tip.
8. Press and release **SCAN** button.
9. Remove probe from ear when triple beep is heard and display flashes **DONE**.
10. Read temperature in display window.
11. Press blue **RELEASE** button to discard probe cover into waste receptacle.
12. Return probe to base unit for storage and snap into place.

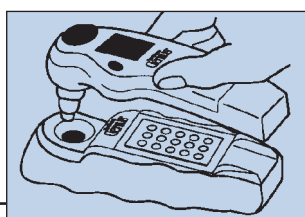
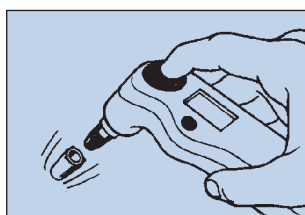
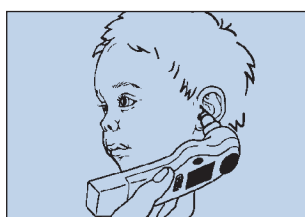
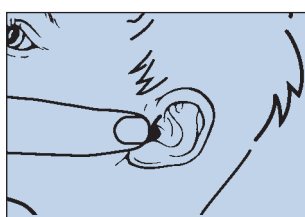
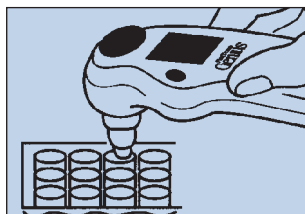
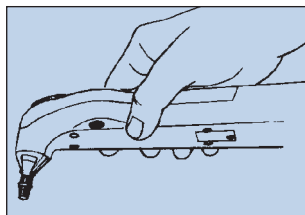
Special Considerations:

- Always wait at least two minutes before taking a temperature in the same ear.
- Incubators and radiant warmers can impact the temperature of the tympanic membrane. For an accurate temperature, choose the "down" ear, ie. the ear positioned nearest to the sheet.
- Older infants who have traditionally had their temperatures taken rectally should have the GENIUS thermometer set in RECTAL equivalence.
- Due to factors such as prematurity, birth weight, illness etc., some neonates may require warming in special environments (incubators, isolettes, radiant warmers) to maintain proper body temperature. Neonates in these artificially warmed environments generally display a different body temperature gradient than neonates in open cots.¹ Although these special environments affect temperature readings at the ear because of radiant and convective warming of the canal, special attention to the position of the neonate while using the GENIUS thermometer may reduce the degree of error.¹ Whether a neonate is lying prone, supine or on the side in such an environment, one ear must be "up", that is, further from the mattress, and the other "down", that is, closer to the mattress. Using the GENIUS thermometer in the "down" ear in incubators and radiant warmers may reduce the effect of an artificially warmed ear canal. Keep in mind, however, that clinical studies suggest that infrared measurements from the tympanic membrane may register higher readings in incubated or radiant-warmed neonates. Clinical investigators attempting to define acceptable degrees of error reach no consensus.^{2,3}
- As always, the consistent use of one site and proper technique when measuring temperatures in neonates are highly recommended.²

¹Mayfield S.R., Nakamura, K.T.R., Bhatia, J., Rios, G.R. & Bell, E.F. (1984). Tympanic membrane temperature of term and preterm neonates. *Early Human Development*, 9, 241-247.

²Keeling, E.B. (1992). Thermoregulation and axillary temperature measurements in neonates: A review of the literature. *Maternal-Child Nursing Journal*, 20, 124-140.

³Weiss, M.A., Poeltler, D. & Geck, I. (1993). Infrared tympanic thermometry for neonatal temperature assessment. *JOGNN*, 23, 798-804.



Infrared Thermometer Instructions

Use the following technique in children older than one month of age:

1. Visually inspect the ear canal to make sure it is clean and dry to allow infrared energy to exit the ear canal. Note the general angle of the ear canal.
2. Remove probe from base unit by grasping the probe shaft firmly, just below the RELEASE button, and lift out of base.
3. Select TYMPANIC by pressing mode button (if TYMPANIC is not already displayed).
4. Make sure the GENIUS thermometer is in tympanic RECTAL equivalence, unless otherwise noted by your hospital policy. RECTAL equivalence is the general frame of reference for use in paediatric patients.
5. Check the GENIUS probe tip to make sure it is clean.
6. Place disposable cover on probe tip, making sure that cover is firmly in place.
7. Gently retract the tragus to open the canal for the tip to fit snugly over the ear canal opening. Aim the probe tip in the direction of the ear canal, making sure there is a good seal over the external auditory meatus. Once the probe is in place, let go of the skin. It will then close in on the probe helping to form a seal.
8. Press and release **SCAN** button.
9. Remove probe from ear when triple beep is heard and display flashes **DONE**.
10. Read temperature in display window.
11. Press blue **RELEASE** button to discard probe cover into waste receptacle.
12. Return probe to base unit for storage and snap into place.

Special Considerations:

- **Always** wait at least two minutes before taking a temperature in the same ear.
- Pressure equalization (PE) or tympanostomy tubes will not compromise accuracy. However, to ensure patient comfort, one week should be allowed post-operatively before using the GENIUS thermometer.
- The GENIUS thermometer is not recommended for any patient with moisture (e.g. blood, spinal fluid, tears, saliva, or mist from a mist tent) in the ear.

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